

Insulin Delivery Systems

Syringes...pens...pumps...inhaled insulin...they all do the same thing - deliver insulin. These items deliver insulin into the tissue so it can be used by the body. This category also includes injection aids - products designed to make giving an injection easier.

Syringes

Today's syringes are smaller and have finer needles and special coatings that work to make injecting as easy and painless as possible. When insulin injections are done properly, most people discover they are relatively painless.

Points to Consider for Optimal Insulin Delivery by Syringe

- The syringe being used should be the right size for the insulin dose.
- It should be easy to draw up and visualize the dosage (devices are available to make this task less complicated).
- Shorter, smaller needles are available which allow for ease of administration.

Insulin Pens

There is a wide range of insulin pen options available. The pens can be an excellent option when children need a single kind of insulin. They can make taking insulin much more convenient. Some children find the pen needles make injection more comfortable.

Pumps

Insulin pumps are computerized devices, about the size of a beeper or pager, which you can wear on your belt or in your pocket. They deliver a steady, measured dose of

insulin through a cannula (a flexible plastic tube) with a small needle that is inserted through the skin into the fatty tissue. The cannula is taped in place - not the needle. Insulin pumps may be worn during most athletic activities.

The pump may be placed on one of several sites on the body, including the abdomen, buttocks, thigh, or arm.

Advantages of the Pump

- Greater flexibility of meals, exercise, and daily schedule
- Improved physical and psychological well being
- Smoother control of blood glucose level
- Lower glycosylated hemoglobin

Disadvantages of the Pump

- Risk of infection at catheter site
- More frequent hypoglycemia
- Risk of ketosis and ketoacidosis
- Constant reminder of diabetes

Responsibilities of Pump Wearer

- Must be willing to test blood sugar a minimum of 4 times/day
- Must learn how to make adjustments in insulin, food, and exercise in response to those test results
- Must respond to blood sugar readings
- Troubleshooting pump for high or low blood sugars readings
- Keep back up insulin, syringe or pen, and pump supplies available at school and home

Inhaled Insulin

Inhaled insulin is a new type of insulin delivery system that has recently completed clinical trial testing. Though the product has not had final approval by the FDA for public marketing, some children are currently using this insulin delivery system from their trial participation.

Information will be forthcoming on the advantages and disadvantages of inhaled insulin, once it has completed FDA approval.

Adapted from: "Children with Diabetes: A Resource Guide for Schools", 2001, New York State Department of Health.